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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/697,975 | 10/31/2003 | Mark Davidson | 1693.1013 | 8976 |
| 21171 | 7590 | 03/27/2006 | EXAMINER | |
| STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005 | | | MOORE, KARLA A | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1763 | |

DATE MAILED: 03/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/697,975

Applicant(s)

DAVIDSON, MARK

Examiner

Karla Moore

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-4 and 14-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 5-7 and 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,409,453 to Brodine et al.
3. Brodine et al. disclose an apparatus capable of physical vapor deposition (column 5, rows 10-14), comprising: a first robot (Figure 2, 44); a blade on the first robot (column 6, rows 7-15), the blade including a pocket (Figures 4-7, especially 5-7; column 7, row 66 through column 8, row 18) to receive a wafer and self correct a positioning error of the wafer in the pocket (column 8, rows 9-18); and a first chamber (any of the four process chambers (34) in Figure 2) to receive the wafer from the blade and deposit a first metal on the received wafer.
4. With respect to claim 6, the apparatus further comprises a second robot (42) capable of receiving the wafer from outside, and transfer the received wafer to the blade, wherein the positioning error may be due to the transfer.
5. With respect to claim 7, the apparatus may further comprise a second chamber (any of the four process chambers (34) in Figure 2) to deposit a second metal on the wafer, wherein the first robot is capable of picking up the first metal deposited wafer from the first chamber and transferring the picked up wafer to the second chamber, and the positioning error may be due to the pick up.
6. With respect to claim 12, the blade defines a calibration hole (Figure 4, 84) therein.
7. With respect to claim 13, the apparatus may further comprise a wafer sensor (column 6, rows 30-33) to emit a beam to detect the wafer, wherein the blade further defines a wafer sensor hole (Figure 4, 82) therein to receive the emitted beam.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brodine et al. as applied to claims 5-7 and 12-13 above, in view of U.S. Patent No. 5,925,227 to Kobayashi et al.

10. Brodine et al. disclose the invention substantially as claimed and as described above.

11. However, Brodine et al. fail to explicitly teach the first and second chamber each comprising an electrostatic chuck capable of accommodating the wafer during the first and second metal depositions. Nor do Brodine et al. explicitly teach the deposition metals as aluminum.

12. Kobayashi et al. teach the use of an electrostatic chuck for the purpose of enhancing surface contact between a wafer and a heat stage (column 7, rows 10-13).

13. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided an electrostatic chuck in Brodine et al. in order to enhance surface contact between the wafer and a heat stage as taught by Kobayashi et al.

14. Kobayashi et al. teach that it is known in the art to use aluminum as a deposition material in the manufacture of integrated circuits using a physical deposition (sputtering) process (column 1, row 6 through column 2, rows 18).

15. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided aluminum as the deposition metal in Brodine et al. in order to manufacture an integrated circuit as taught by Kobayashi et al.

16. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brodine et al as applied to claims 5-7 and 12-13 above and as described below.

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17. Brodine et al. disclose the invention substantially as claimed and as described above.

18. However, Brodine et al. fail to explicitly teach the diameter of the pocket as approximately 7.408 inches.

19. Brodine et al. teach that the pocket for a wafer in a wafer handler can be designed as desired such that it may support wafers of desired size(s) (column 6, row 66 through column 7, row 6).

20. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have designed a particularly sized handler for use with a particular wafer as taught by Brodine et al.

21. Examiner also notes that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

22. Claims 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brodine et al. as applied to claims 5-7 and 12-13 above, in view of U.S. Patent Publication No2003/0070316 A1 to Weed et al.

23. Brodine et al. disclose the invention substantially as claimed and as described above.

24. However, Brodine et al. fail to teach the blade is formed of aluminum with nickel plating.

25. Weed et al. teach forming a substrate supporting surface with nickel plated aluminum in order to take advantage of the material's low coefficient of friction (paragraph 22).

26. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided the blade (a substrate supporting surface) from a material such as nickel plated aluminum in Brodine et al. in order to take advantage of the material's low coefficient of friction as taught by Weed et al.

Response to Arguments

27. Applicant's arguments filed 4 January 2006 have been fully considered but they are not persuasive.

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28. The pocket in the blade of Brodine et al. is formed by the depressed volume that includes the space from a fixed end adjacent shelf a (154) to a surface of the high profile end shoe (158). A positioning error of the wafer can be achieved using high profile end shoe. Admittedly, a wafer supported by the blade is not received and touching a flat, continuous planar main part of the blade, wherein that part also performs wafer positioning, as Applicant argues. However, this is not what is recited in the rejected claim. What is recited in the rejected claims is "a pocket to receive a wafer and self correct a positioning error of the wafer in the pocket". This is clearly taught by Brodine et al. It is noted that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

29. Objections to the declaration are withdrawn.

Conclusion

30. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 571.272.1440. The examiner can normally be reached on Monday-Friday, 9:00 am-6:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571.272.1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Karla Moore
Patent Examiner
Art Unit 1763
13 March 2006